

**AMENDMENT**

**IN THE CLAIMS:**

Please amend the claims as follows:

1. (Canceled)

2. (Currently amended) The substrate processing apparatus according to claim 1 claim 8,  
wherein

the object is at least a part of a processing vessel in which a substrate received therein is  
processed.

3. (Original) The substrate processing apparatus according to claim 2, wherein  
the substrate is processed in the processing vessel with the use of a plasma.

4. (Original) The substrate processing apparatus according to claim 3, further comprising a  
heater that heats the object, at least when no plasma is generated.

5. (Original) The substrate processing apparatus according to claim 2, further comprising a  
heating furnace that receives the processing vessel, wherein

the mist passage is formed as a space defined between the processing vessel and the  
furnace.

6-7. (Canceled)

8. (Currently amended) The substrate processing apparatus according to claim 6, wherein A  
substrate processing apparatus for processing a substrate for manufacturing a semiconductor  
device, comprising an object to be cooled, the apparatus further comprising:

a mist generator that generates a mist;

a carrier-gas supply source that supplies a carrier gas for carrying the mist generated in

the mist generator;

a mist passage through which the mist carried by the carrier gas flows to cool the object;  
a temperature sensor that detects a temperature of the object; and  
a controller that controls the mist generator and the gas supply source, based on a  
temperature detected by the temperature sensor;

the controller carries out a control operation to stop a generation supply of the mist by  
from the mist generator, while continuing a supply of the carrier gas from the gas supply source,  
when the detected temperature of the temperature sensor is not more than a reference value.

9. (Canceled)

10. (Currently Amended) The A substrate processing apparatus according to claim 1, for  
processing a substrate for manufacturing a semiconductor device, comprising an object to be  
cooled, the apparatus further comprising:

a mist generator that generates a mist;  
a carrier-gas supply source that supplies a carrier gas for carrying the mist generated in  
the mist generator;  
a mist passage through which the mist carried by the carrier gas flows to cool the object;  
and  
a gas-liquid separator that separates the mist circulated in the mist passage from the  
carrier gas, and collects the separated mist as a liquid,  
wherein  
the mist generator generates the mist from the liquid collected by the separator.